About the Institute:

National Institute of Technology, Tiruchirappalli (NIT-T), is one among the premier Institutions of India and is well known for its high standards in teaching and research. It offers 10 Undergraduate and 23 Postgraduate programmes in the disciplines of Engineering, Science, Architecture and Management. NIT-T retained its 1st position amongst its 31 counterparts in the country in the National Institutional Ranking Framework (NIRF) 2023 Ranking (Engineering) released by the Ministry of Education and also found place in top 10 engineering colleges in the country.

About the Department:

The Department of Mechanical Engineering is one among the first three departments established in 1964. The Department offers an undergraduate level programme in Mechanical Engineering, postgraduate level programmes in Thermal Power Engineering and Industrial Safety Engineering and research programmes in M.S and Ph.D. The department keeps itself up to date with the state of art laboratories in order to nurture collaborative and cutting edge research activities.

About the Centre:

Centre for Combustion and Emission Studies (CCES) was inaugurated on 2021 in CEDI building, NIT-T. The primary focus of CCES is to understand fundamentals of combustion and emission formation processes for various automotive and industrial applications. The centre has both experimental and numerical facilities for combustion and emission research. CCES is equipped with high-end workstations for simulating complex combustion problems and chemical kinetics of E-fuels. Further, the feasibility and potential limitations of the advanced combustion concepts were also being explored in CCES.

Science and Engineering Research Board
Government of India
Sponsored

High End Workshop (Karyashala) on

ADVANCED COMBUSTION TECHNOLOGIES FOR HYDROGEN BASED FUELS (ACTHF – 2024)

(Under Accelerate-Vigyan Scheme)

March 17th – 23rd, 2024

Organized by

DEPARTMENT OF MECHANICAL ENGINEERING
AND
CENTRE FOR COMBUSTION AND EMISSION STUDIES
NATIONAL INSTITUTE OF TECHNOLOGY
TIRUCHIRAPPALLI - 620015

Event Coordinators:

Dr. S. Vedharaj

Dr. Sreejith Mohan

Email: cces@nitt.edu

About the Workshop:

For over a century, internal combustion engines (ICE) have been the dominant powertrain for the transportation sector. However, in the current scenario, ICE's should employ sustainable and green fuel resources with higher engine efficiency. The use of hydrogen based fuel in an ICE powertrain enables to achieve carbon neutrality. In the recent times, the adoption of advanced combustion concepts like HCCI, RCCI, GCI, PPCI, pre-chamber ignition system, laser ignition system, and split cycle engines are widely researched for ICE powertrain. Hence, the theme of this workshop is to introduce the advanced combustion concepts that are currently being researched for ICE applications. Further, this workshop also provides hands-on-training on the modelling of these advanced combustion concepts with CFD software's like CONVERGE, OpenFOAM, COMSOL.

The major topics to be covered in the workshop includes

- Overview on the low temperature combustion technologies
- Green hydrogen production technologies
- Pre-chamber Spark ignition system
- Flameless combustion technologies
- Optical and laser diagnostic techniques for combustion applications
- Hands on training in Spray and flame visualization techniques
- Spray Simulation with Open FOAM with hands on training
- Combustion Chemical kinetics with hands on training
- IC engine Sector mesh simulation with hands on training

This workshop is meant for the scholars who are interested in the internal combustion engine research field and it provides an opportunity to gain invaluable information from eminent speakers. Further, this workshop also provide a platform for the scholars to discuss and interact with eminent persons leading to a collaborative research environment.

Schedule:

Workshop will be conducted in OFFLINE MODE ONLY and experts may join through online mode due to their availability. Eminent Speakers from IIT's, NIT's, Government R&D organizations and Industries will deliver lecture. The schedule of the Programme will be shared to the participants through their registered email id.

Who Can Attend?

- Research Scholars, PG and B.Tech/B.E (Final year) students from Science and Engineering (Mechanical / Production / Automobile / Aerospace / Mechatronics etc.) disciplines are eligible to apply.
- Seats are limited and thus the selection process shall be first come first serve basis.
- **The number of participants shall be restricted to 25.**

Registration:

- No Registration Fee
- Traveling allowance, Food and Accommodation will be provided for the selected participants as per SERB funding and norms.
- Use the below link for workshop registration

https://forms.gle/2L2hTHzGVK41F4gY8

Important Dates:

Last date for submission or Registration – **5th March 2024**
Confirmation of Participation – **6th March 2024**
Workshop Dates – **17th to 23rd March 2024**

Contact Persons:

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